



## *Confirmation of Product Type Approval*

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 27/JUL/2016. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 12/JUN/2017 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

**Product Name:** Switches, Ethernet  
**Model Name(s):** Series 100/700/1000/1008TX

**Presented to:**  
N-TRON CORP.  
3101 INTERNATIONAL DRIVE, BUILDING 6  
United States

**Intended Service:** Marine & Offshore - Industrial Ethernet Switches for Network Applications.

**Description:** The Series 100 is Unmanaged Ethernet Switches, Series 700 is Managed Ethernet Switches and the Series 1000 is Unmanaged Gigabit Ethernet Switches. These Switches provide multi RJ-45 auto sensing 10/100 BaseTX or 10/100/1000 BaseT ports and one or two 100 BaseFX or 1000 BaseSX/LX SFP Fibre Optic uplink ports. The Series 700 consists of management functions configurable using a Web Browser. The series 100-POE4/105TX-POE versions are able to power devices via the network. All switch units are DIN rails mountable. Enclosure rating of the M12 switches is up to IP67 with D-coded style connectors. The 1008TX features eight Gigabit Ethernet ports in a hardened DIN-rail enclosure with redundant power inputs. The 1008TX unmanaged Ethernet switch provides expanded connectivity, plug-and-play installation, and jumbo frame support for high bandwidth applications. Ideal for deployment in oil and gas, water/wastewater, utility, transportation, mining and factory floor networking applications; the 1008TX enables customers to address the most demanding industrial communication requirements while providing high throughput and minimum downtime. Series 100 comprises Type 102MC, 104TX, 105TX, 105FX, 108TX, 100-POE4, 105TX-POE, 105FX-POE, 105M12, 106FX2, 108M12, 105TX-SL, 116TX, 110FX2, 110FXE2, 111FX3, 111FXE3, 112FX4, 112FXE4, 114FX6 and 114FXE6. Series 700 comprises Type 708TX, 708FX2, 1003GX2, 708M12 and 716M12. Series 1000 comprises Type 1002MC, 1003GX2, 1005TX, 1000-POE+, 1008TX.

**Tier:** 3

<b>Ratings:</b>	* Series 100/700/1000 - Input Voltage: 10-30 and 46-49 VDC; Input Current: 140 to 545 mA@24V, 1.32 A and 1.6A@48V; Class I, Div 2 Group A, B, C and D, T4 or T4 A; Network Media: CAT 3 or CAT 5 cables. * 716M12 - Operating Temperature: -40°C to 85°C; Enclosure: IP67; Redundant Input Voltage: 10-49 VDC; Input Current Max: 350mA max @ 24 VDC; Refer to attached 716M12 Data sheet for more details. * 1008TX Input Voltage: 10-49 VDC Steady Input Current: 250 mA @ 24 V Operating Temperature: -40°C to 85°C Storage Temperature: -40°C to 85°C Operating Humidity: 10% to 95% (Non Condensing) Hazardous Area: Class I, Division 2, Groups A, B, C and D; T4 Refer to attached 1008TX Data sheet for more details.
<b>Service Restrictions:</b>	Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
<b>Comments:</b>	The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
<b>Notes / Documentation:</b>	1008TX PDA Information, PDA Technical Information, Revision: -, Pages: 1 ADLD0372_1008TX Data Sheet_011215, Datasheet, Revision: -, Pages: 1 CE_14-0399, CE EMC Technical Report, Revision: -, Pages: 1 Correspondence, Type Approval Application, Revision: -, Pages: 1 Correspondence, Purchase Order 0000729, Revision: -, Pages: 1 EN55011_14-0399, EMI Test Report, Revision: -, Pages: 1 FCC_ICES_14-0399, EMI Test Report-FCC, Revision: -, Pages: 1 ISO Certificate 46911-2009-AQ-USA-RvA, ISO Cert, Revision: -, Pages: 1 N-TRON_GOST_Certificate_Valid_Until_10feb16, N-Tron GOST, Revision: -, Pages: 1 UL File E214222 Canada 1008TX, UL, Revision: -, Pages: 1 UL File E214222 US 1008TX, UL, Revision: -, Pages: 1 UL File ENWS.E214222; N-Tron Product Datasheet: 110FX2; N-Tron Product Datasheet: 111FX3; N-Tron Product Datasheet: 112FX4; N-Tron Product Datasheet: 114FX6; N-Tron/Redlion Product Datasheet: 1000-PoE+; N-Tron Product Datasheet: 116TX; N-Tron Product Datasheet: 105TX-SL; N-Tron Product Datasheet: 106FX2; Mariner Systems (N-Tron Corp) Test File No. TL1212.
<b>Term of Validity:</b>	This Product Design Assessment (PDA) Certificate 14-HS1213537-5-PDA, dated 16/Mar/2015 remains valid until 12/Jun/2017 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.
<b>ABS Rules:</b>	Rules for Conditions of Classification, Part 1 - 2015 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: Steel Vessels: 4-8-2/11.5.4, 4-8-3/1.11Table 2, 4-8-3/13, 4-8-4/27; Steel Vessels Under 90 meters (295 feet) in Length: 4-6-2/15, 4-6-2/15, 4-6-3/11; Offshore Support Vessels (OSV Rules): 4-8-2/11.5.4, 4-8-3/1.11Table 2, 4-8-3/1, 4-8-4/29; Rules for Conditions of Classification, 2015- Offshore Units and Structures 1-1-A2, 1-1-A3, which covers the following: Mobile Offshore Drilling Units: 4-3-2/15.9.1 & 3, 4-3-6; Offshore Installations: 3-6/5.1;
<b>National Standards:</b>	FCC/CE Title 47, Part 15, Subpart B - Class A; IEEE 1613, UL 508, ANSI/ISA-12.12.01-2013
<b>International Standards:</b>	IACS E10, EN61000-4-2/3/4/5/6/8/11, EN61000-6-2/4, EN 55011, C22.2 No.14-M05 and C22.2 No.213-M1987
<b>Government Authority:</b>	
<b>EUMED:</b>	
<b>Others:</b>	

<b>Model Certificate</b>	<b>Model Certificate No</b>	<b>Issue Date</b>	<b>Expiry Date</b>
PDA	14-HS1213537-5-PDA	16/MAR/2015	12/JUN/2017



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.